

**Amendments to the Specification**

Please amend the specification by inserting the following paragraph immediately after the Title of the Invention:

**--Cross-Reference to Related Application**

This application is a 371 of PCT/US2005/003772 filed February 4, 2005, which claims the benefit of U.S. Provisional Application No. 60/543,006 filed 9 February 2004.--

catalyst while at reaction temperature in the separation device is less than about 5 seconds, and the total average contact time is less than about 10 seconds.

6. A process of claim 1 wherein the paraffinic hydrocarbons are selected from ethane, propane, isopropane, and butane; and the alkylaromatic hydrocarbons are selected from ethylbenzene, propylbenzene and methylethylbenzene.

7. (cancelled) A process of claim 1 wherein the dehydrogenation reactor is a riser reactor.

8. A process of claim 1 wherein the hydrocarbon is introduced to the dehydrogenation reactor at multiple points of entry.

9. (currently amended) A process of claim ~~[[8]]~~ 7 wherein both a paraffinic hydrocarbon and alkylaromatic hydrocarbon are introduced into the same dehydrogenation reactor with the paraffinic hydrocarbon being introduced at a relatively lower point of entry than the alkylaromatic hydrocarbon.

10. (currently amended) A process of claim 1 wherein the temperature within the dehydrogenation reactor is from about 500 to about 800°C, and the pressure is from 25.5 (3.7) to about 446 (64.7) kilopascals (psia) .

11. (cancelled) A process of claim 10 wherein the pressure is from about 3.7 to about 14.7 psia.

12. (cancelled) A process of claim 10 wherein the temperature is from about 570 to about 750°C.

13. (currently amended) A process of claim ~~[[3]]~~ 1 wherein catalyst from the separation device is transferred to one of: a catalyst regenerator wherein the catalyst is regenerated and returned to the dehydrogenation reactor, and a recycle loop wherein catalyst is recycled from the separation device back to the dehydrogenation reactor.

14. (currently amended) A process of claim ~~[[13]]~~ 10 wherein the catalyst from the recycle loop and regenerator are combined and introduced into the dehydrogenation reactor.

15. (currently amended) The process of claim 1 wherein the dehydrogenation catalyst ~~[[is]]~~ comprises gallium carried by an alumina or alumina silica support.

16. (currently amended) The process of claim 15 wherein the catalyst comprises ~~[[a comprises]]~~ an alkali or alkaline earth metal selected from at least one of: sodium, lithium, potassium, rubidium, magnesium, calcium, strontium and barium, and further comprises promoter selected from at least one of: manganese and platinum.